

were first noted on the extreme north Pacific coast. No. III disappeared over the Saskatchewan Valley by the time the one hundred and fifth meridian was reached; No. V disappeared a short distance east of Manitoba within two days; No. VIII moved southeastward to a vanishing point in northern Kansas, while No. X remained stationary for two days, and then moved entirely across the country, disappearing into the ocean off Newfoundland, after causing considerable heavy snow over the northern tier of States east of the Mississippi River. No. VII, which first appeared on the Mexican Gulf coast, developed into the severest storm of the month, and moved almost due northward up the Mississippi Valley, then slightly northeastward beyond Lake Superior. Some of the high wind velocities attained as a result of this low are as follows: Chicago, 56 miles an hour; Buffalo, 64; Cleveland, 52; New York, N. Y., 56, and Boston, 40. Nos. XIII and XV originated over Lake Superior, and disappeared over the St. Lawrence Valley. No. XIV, although of limited duration and extent, resulted in severe freezing temperatures in northern and central Florida on the night of January 1, 1900. No. IX, during the passage of which the lowest pressures of the month were recorded, first appeared in southern Texas, moved almost due northeastward through the St. Lawrence Valley, and thence eastward by way of Newfoundland. During this storm New York, N. Y., reported a wind velocity of 60 miles an hour; Cleveland, 52; Buffalo, 46, and Block Island, 48. Low No. XII moved rapidly from northern Alberta to western Gulf of Mexico. No. XI consisted in reality of two separate storms, one first appearing in northern Alberta, and the other in Mississippi. The two joined forces in western Ontario in two and one-half days, and moved eastward as one storm to about the seventieth meridian, where it disappeared. The remaining lows were not of great importance.—*H. C. Frankenfield, Forecast Official.*

Movements of centers of areas of high and low pressure.

Number.	First observed.			Last observed.			Path.		Average velocities.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long. W.	Length.	Duration.	Daily.	Hourly.
High areas.										
I.....	1, p.m.	46	124	3, p.m.	43	109	1,450	2.0	725	30.2
II.....	3, a.m.	53	108	7, p.m.	33	79	3,955	4.5	719	30.0
III.....	5, a.m.	41	124	7, a.m.	39	109	1,140	2.0	570	28.8
IV.....	8, p.m.	48	85	10, a.m.	44	68	970	1.5	647	37.0
V.....	9, a.m.	41	124	10, p.m.	41	105	1,150	1.5	767	31.9
VI.....	12, a.m.	53	108	14, a.m.	48	85	1,250	2.0	625	26.0
VII.....	12, a.m.	30	90	13, p.m.	33	80	750	1.5	500	20.8
VIII.....	14, p.m.	38	105	17, p.m.	45	60	2,730	3.0	910	38.0
IX.....	25, p.m.	48	100	27, a.m.	34	78	1,680	1.5	1,120	46.7
Sums.....							17,075	19.5	6,588	274.4
Mean of 9 paths.....							1,875		731	30.5
Mean of 19.5 days.....									773	32.2
Low areas.										
I.....	2, a.m.	41	96	5, a.m.	50	64	2,250	3.0	750	31.2
II.....	4, p.m.	50	100	6, a.m.	45	77	1,125	1.5	750	31.2
III.....	4, a.m.	48	125	5, p.m.	53	105	1,225	1.5	817	34.0
IV.....	6, p.m.	54	114	10, a.m.	46	60	2,750	3.5	786	32.7
V.....	7, a.m.	46	124	9, a.m.	50	97	1,485	2.0	742	30.9
VI.....	9, a.m.	38	100	10, a.m.	49	89	1,020	1.0	1,020	42.5
VII.....	10, a.m.	26	98	12, a.m.	46	87	1,610	2.0	805	33.5
VIII.....	10, p.m.	48	125	12, a.m.	40	98	1,600	1.5	1,067	44.4
IX.....	13, p.m.	30	99	16, a.m.	48	54	2,800	2.5	1,120	46.7
X.....	16, p.m.	46	124	20, a.m.	48	54	3,600	3.5	1,029	42.9
XI.....	22, p.m.	32	91	25, a.m.	47	71	1,920	2.5	768	32.0
XII.....	24, p.m.	54	114	27, a.m.	26	98	2,390	2.5	916	38.2
XIII.....	27, p.m.	46	84	30, a.m.	49	64	1,725	2.5	690	28.8
XIV.....	30, p.m.	30	95	31, p.m.	28	88	980	1.0	980	40.8
XV.....	31, p.m.	46	84	12, a.m.	48	64	1,830	1.5	920	38.3
Sums.....							29,910	34.5	14,020	583.9
Mean of 16 paths.....							1,869		876	36.5
Mean of 84.5 days.....									867	36.1

* No. XI considered as two in totals and means.

† January.

RIVERS AND FLOODS.

On account of the formation of ice, there was less water than during the preceding month in the Mississippi River north of Cairo, and in the Missouri, except at Kansas City, the lowest stages occurring either near the end of the month or at the time the ice closed the rivers.

Floating ice was observed as early as the 4th of the month at La Crosse, on the 5th at St. Paul, the 6th at Davenport, 15th at Keokuk and Hannibal, and 18th at St. Louis and Chester. At St. Paul, on the 19th, the ice gorged above the Robert street bridge in front of the city; on the 27th the river closed at Davenport, and on the 30th at Keokuk. At Hannibal the ice gorged at the Wabash Bridge on the 26th, and on the 30th above Chester, but only for a few hours.

In the Missouri River the first ice reached Omaha on the 4th, Kansas City on the 13th, Boonville, Mo., on the 25th, and Hermann, Mo., on the 15th. The river was closed at Bismarck on the 10th, at Pierre on the 17th, and at Sioux City on the 20th.

Navigation was suspended by the 15th on the Mississippi River as far south as Hannibal, by the 20th on the Missouri River as far as Sioux City, and on the lower Missouri River on the 26th.

The Ohio and lower Mississippi rivers were higher than during November, 1899, and owing to the abundance of water there was a general resumption of navigation on the former about the 14th. There was some ice during the latter part of the month, reaching Paducah, Ky., on the 31st. It caused some interruption to navigation at various places, and on the 30th resulted in its entire suspension between Pittsburg and Cincinnati.

In the lower Mississippi River and its tributaries the water averaged from one to eight feet higher than during November, except from New Orleans southward, but no high stages were recorded.

The rivers of the Middle Atlantic States changed but little during the month. The Susquehanna River was filled with ice at Wilkesbarre, Pa., after the 25th, and froze over on the 30th. Ice also appeared at Williamsport, Pa., on the West Branch of the Susquehanna River on the 25th.

There was considerable ice in the Potomac River during the last week of the month, interfering somewhat with navigation on the lower river, although a channel was kept open by the larger steamers.

The James River froze over at Lynchburg on the 30th and at Richmond on the 29th. The most southerly point from which ice was reported was Weldon, N. C., on the Roanoke River.

Over the Mobile system and in the rivers of the South Atlantic States the stages were considerably higher than during the preceding month, particularly over the former, where heavy rains during the middle of the month caused a marked rise. At Demopolis, Ala., on the Tombigbee River, there was a rise of 30 feet from the 10th to the 17th, 22 feet of which occurred from the 12th to the 15th. At Tuscaloosa, Ala., on the Black Warrior River, there was a rise of about 39 feet from the 10th to the 13th. Danger line stages were not quite reached, and no loss or damage resulted as far as is known.

On the Pacific coast the only item of interest was the rise in the Willamette River during the early days of the month, the danger line stage of 15 feet being reached at Portland, Oreg., on the 2d. This rise began during the closing days of November, and all interests were kept fully advised as to the probable maximum stage. There was a second rise from the 10th to the 14th, and on the 13th, at Albany, Oreg., a stage of 21.2 feet was recorded, 1.2 feet above the danger line.

A study of the gradual movement of the line of total freezing, and the varying thickness of the ice in the rivers, affords

an excellent method of observing the intensity and duration of the winter season. The following table, compiled mostly from data taken from the weekly snow and ice charts, shows these conditions as they existed at the end of each week, commencing December 4, 1899:

Thickness of ice in rivers (in inches), winter of 1899-1900.

Stations.	December.				January.				
	4	11	18	25	1	8	15	22	29
Moorhead, Minn.					12.0				
Williston, N. Dak.	1.0	1.5	6.0	8.0	16.0				
Bismarck, N. Dak.			1.5	9.0	16.0				
Pierre, S. Dak.			1.5	3.5	14.0				
Yankton, S. Dak.			5.0	7.0	10.0				
Sioux City, Iowa.				1.5	10.0				
Omaha, Nebr.					10.0				
St. Paul, Minn.					12.5				
La Crosse, Wis.				5.0	10.0				
Dubuque, Iowa.			4.0	5.0	12.0				
Davenport, Iowa.					8.0				
Keokuk, Iowa.					10.0				
Hannibal, Mo.					8.0				
Topeka, Kans.					6.5				
Wichita, Kans.					2.0				
Pittsburg, Pa.					4.0				
Parkersburg, W. Va.					1.0				
Louisville, Ky.					5.0				
Columbus, Ohio.					7.0				
Bangor, Me.			2.0	2.0	4.5				
Albany, N. Y.					4.0				
Philadelphia, Pa.					2.0				
Washington, D. C.					5.0				
Lynchburg, Va.					4.0				

A comparison of this table with the one which appeared in the REVIEW for January, 1899, shows clearly and graphically the mildness of the present month as contrasted with December, 1898. No ice was reported in the rivers during November of this year, while in 1898 it appeared in the upper Missouri River in the early days of the month, and in the Mississippi River on the 22d. It steadily increased in thickness during December, and at the end of the month was about twice as thick as on December 31, 1899, although the southern limits of total freezing were nearly identical over the Mississippi system. It should also be remarked that during the present year there was no ice of consequence until the last week of the month.

The highest and lowest water, mean stage, and monthly range at 123 river stations are given in the accompanying table. Hydrographs for typical points on seven principal rivers are shown on Chart V. The stations selected for charting are: Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.—H. C. Frankenfield, *Forecast Official.*

Heights of rivers referred to zeros of gages, December, 1899.

Stations.	Distance to mouth of river.	Danger line on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Mississippi River.	Miles.	Feet.	Feet.		Feet.		Feet.	Feet.
St. Paul, Minn.	1,954	14	4.7	1,2	2.5	7,8	2.2	2.2
Reade Landing, Minn.	1,864	12	2.7	1	0.7	24,35,39-51	1.4	2.0
La Crosse, Wis.	1,819	13	6.0	19	3.2	9-16	3.7	2.8
North McGregor, Iowa.	1,759	15	3.9	1-5	2.8	14	1.5	1.0
Dubuque, Iowa.	1,698	18	3.3	1	2.8	15	3.3	2.6
LeClaire, Iowa.	1,609	10	2.2	1,2	0.4	18	1.5	2.6
Davenport, Iowa.	1,593	15	3.7	27	0.6	19,23	2.3	3.1
Muscatine, Iowa.	1,563	16	4.1	2,5	1.1	21,25	3.0	3.0
Galland, Iowa.	1,473	8	1.6	1	0.4	27,34	1.1	1.2
Keokuk, Iowa.	1,463	15	2.6	30	—	28	0.7	4.3
Hannibal, Mo.	1,402	13	3.3	1-5	1.6	30	2.1	4.8
Grafton, Ill.	1,306	23	4.8	1	0.8	31	3.6	4.0
St. Louis, Mo.	1,264	30	5.4	1	—	31	3.8	6.0
Chester, Ill.	1,169	30	3.4	1,2	—	31	2.4	3.9
Memphis, Tenn.	843	33	11.0	30	2.5	10-13	5.5	8.5
Helena, Ark.	797	42	16.1	30,31	4.7	11,12	8.0	11.4
Arkansas City, Ark.	635	42	17.3	31	4.9	16	8.3	12.4
Greenville, Miss.	595	42	13.5	31	3.8	16-18	6.3	9.7
Vicksburg, Miss.	474	45	12.7	31	2.0	17-19	4.4	10.7
New Orleans, La.	108	16	4.8	11,12	2.9	2-5,7,8,25	3.8	1.4

Heights of rivers referred to zeros of gages—Continued.

Stations.	Distance to mouth of river.	Danger line on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Missouri River.	Miles.	Feet.	Feet.		Feet.		Feet.	Feet.
Bismarck, N. Dak.	1,309	14	8.5	10	0.5	5	2.1	3.0
Pierre, S. Dak.	1,114	14	2.4	1-3	0.7	14,17	1.4	1.7
Sioux City, Iowa.	784	19						
Plattsmouth, Nebr.	669	18	6.8	1-5	4.3	24	5.6	2.5
St. Joseph, Mo.	641							
Kansas City, Mo.	481	10	2.0	14	—	1.1	29-31	0.5
Boonville, Mo.	388	21	13.1	18	5.2	31	7.3	6.9
Hermann, Mo.	199	30	5.5	1,2	3.1	24	4.6	2.4
Peoria, Ill.	103	24	4.9	1-6	2.3	31	4.2	2.6
Youghiogheny River.								
Confidence, Pa.	59	10	4.1	13	0.9	11	2.0	3.2
West Newton, Pa.	15	23	7.0	13	0.8	8	2.0	6.2
Allegheny River.								
Warren, Pa.	177	14	7.2	13	0.6	1,2	2.9	6.6
Oil City, Pa.	123	13	8.2	20	1.2	1,2	3.8	7.0
Parker, Pa.	73	30	9.5	20	1.1	1,2	4.2	8.4
Monongahela River.								
Weston, W. Va.	161	18	2.8	20	—	0.7	9,10	0.1
Fairmont, W. Va.	119	25	6.0	25	0.8	9-11	2.4	5.2
Greensboro, Pa.	81	18	12.2	13	7.0	2,7-11	8.3	5.2
Lock No. 4, Pa.	40	38	14.0	13	8.2	31	10.0	5.8
Conemaugh River.								
Johnstown, Pa.	64	7	4.6	13	1.9	6,7,10	2.7	2.7
Red Bank Creek.								
Brookville, Pa.	35	8	2.6	13	1.0	1,5-11	1.4	1.6
Beaver River.								
Ellwood Junction, Pa.	10	14	5.0	20,21	—	0.5	4-6	2.0
Great Kanawha River.								
Charleston, W. Va.	61	30	7.9	14	3.2	30,31	6.1	4.7
New River.								
Hinton, W. Va.	95	14	4.3	14	1.0	8-10	1.5	3.3
Cheat River.								
Rowlesburg, W. Va.	36	14	5.0	13	1.5	1	2.9	3.5
Ohio River.								
Pittsburg, Pa.	966	22	13.8	14	2.5	31	7.4	11.3
Davis Island Dam, Pa.	960	25	13.4	14	2.9	2	7.4	9.5
Wheeling, W. Va.	875	36	17.7	15	4.0	3,4	9.4	13.7
Parkersburg, W. Va.	735	36	17.2	23	5.1	5	10.2	12.1
Point Pleasant, W. Va.	708	39	18.5	16	3.4	6,7	9.5	15.1
Huntington, W. Va.	680	50	21.3	17	6.0	7,8	13.6	15.3
Catlettsburg, Ky.	651	50	21.3	17	3.9	7,8	11.4	17.4
Portsmouth, Ohio	612	50	21.0	17	5.1	8	12.1	15.9
Cincinnati, Ohio	499	50	23.0	26	6.3	9,10	12.4	18.7
Madison, Ind.	413	46	20.0	27	6.0	11	11.8	14.0
Louisville, Ky.	367	28	9.4	27	3.6	10,11	6.4	5.8
Evansville, Ind.	148	35	17.0	29	4.6	11	9.5	12.2
Paducah, Ky.	47	40	15.6	29	2.7	6-11	7.9	12.9
Cairo, Ill.	1,073	45	18.4	27	6.5	8-11	11.3	11.9
Mississippi River.								
Zanesville, Ohio.	70	30	11.7	21	6.0	5	7.6	5.7
Miami River.								
Dayton, Ohio.	69	18	2.1	21	0.7	7-9	1.3	1.4
Wabash River.								
Mount Carmel, Ill.	50	15	7.4	24	1.4	10,11	3.5	6.0
Licking River.								
Falmouth, Ky.	30	25	5.0	24,25	1.0	4,10,11	2.0	4.0
Clinch River.								
Spears Ferry, Va.	156	30	2.2	25	—	0.7	10	0.4
Clinton, Tenn.	46	25	7.0	27	1.9	1	3.4	5.1
Tennessee River.								
Knoxville, Tenn.	614	28	4.7	14	—	0.8	11	1.1
Kinston, Tenn.	534	25	5.2	26	0.7	1	2.8	4.5
Chattanooga, Tenn.	430	33	7.6	14	1.4	9-11	4.0	6.2
Bridgeport, Ala.	390	24	6.0	15	0.4	7-11	2.8	5.6
Florence, Ala.	320	16	6.7	26	0.3	5,9,10	3.7	6.4
Iriverton, Ala.	190	25	8.9	26,27	—	0.8	5,7-10	4.7
Johnsonville, Tenn.	94	21	10.3	27	0.9	8-10	5.7	9.4
Cumberland River.								
Burnside, Ky.	434	30	7.8	25	0.1	10,11	2.6	7.7
Carthage, Tenn.	175	40	9.7	25	0.6	5,7-10	4.3	9.1
Nashville, Tenn.	257	40	13.7	24,25	0.8	1-5	6.6	12.9
Arkansas River.								
Wichita, Kans.	726	10	2.4	10	1.9	23	2.1	0.5
Webbers Falls, Ind. T.	413	23	2.6	1	2.0	{13,16,18,20,21}	2.2	0.6
Fort Smith, Ark.	351	23	8.3	20	2.3	15,16	4.5	6.0
Dardanelle, Ark.	256	21	7.8	22	2.4	16-18	4.1	5.4
Little Rock, Ark.	176	23	9.0	23	3.7	12,17,18	5.5	5.3
White River.								
Newport, Ark.	150	26	6.7	21	2.0	10	3.9	4.7
Yazoo River.								
Yazoo City, Miss.	80	25	6.3	24,25	—	1.7	1	2.5
Red River.								
Arthur City, Tex.	80	35						
Fulton, Ark.	688	37	21.5	1	9.5	12,13	13.5	12.0
Shreveport, La.	665	28	13.5	1	7.9	15,16	10.4	5.6
Alexandria, La.	449	29	11.4	4-6	5.6	18,19	8.5	5.8
Ouachita River.								
Camden, Ark.	340	39	10.7	23	4.1	9,10	6.6	6.6
Monroe, La.	100	40	5.9	28-31	1.3	4,5	2.0	4.6
Atchafalaya River.								
Melville, La.	100*	31	14.3	31	8.3	1	10.6	6.0
Susquehanna River.								
Wilkesbarre, Pa.	178	14	5.4	27	0.0	1-12	2.1	5.4
Harrisburg, Pa.	70	17	6.8	26	1.5	3-12	3.4	5.3
W. Br. of Susquehanna.								
Williamsport, Pa.	35	30	7.5	14	1.5	1,2,7	3.6	6.0
Juniata River.								
Huntingdon, Pa.	80	24	4.8	13	3.0	1-12	3.6	1.8
Potomac River.								
Harpers Ferry, W. Va.	170	16	2.8	25	0.7	18	1.5	2.1

Heights of rivers referred to zeros of gages—Continued.

Stations.	Distance to mouth of river.	Danger line on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
<i>James River.</i>	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
Lynchburg, Va. ¹³	257	18	1.6	13	0.0	1-3, 8-11	0.4	1.6
Richmond, Va. ¹	110	12	0.9	24	- 2.8	28	-1.3	3.7
<i>Roanoke River.</i>								
Weldon, N. C.	90	40	11.9	14	6.9	31	8.5	5.0
<i>Cape Fear River.</i>								
Fayetteville, N. C.	100	38	14.0	14	4.0	13, 22	6.4	10.0
<i>Lumber River.</i>								
Fairbluff, N. C.	10	6	4.1	10-12	2.9	1	3.5	1.2
<i>Edisto River.</i>								
Edisto, S. C.	75	17	5.3	1	4.1	23-28	4.5	1.2
<i>Pedee River.</i>								
Cheraw, S. C.	145	27	9.0	14	1.2	11	3.0	7.8
<i>Black River.</i>								
Kingstree, S. C.	60	12	5.3	22, 23	3.7	29	4.6	1.6
<i>Lynch Creek.</i>								
Effingham, S. C.	35	12	8.3	6	4.8	26	6.1	3.5
<i>Santee River.</i>								
St. Stephens, S. C.	50	12	7.3	19, 20, 31	1.8	13	5.4	5.5
<i>Congaree River.</i>								
Columbia, S. C.	37	15	4.2	25	0.0	10	0.9	4.2
<i>Wateree River.</i>								
Camden, S. C.	45	24	17.4	14	3.3	11	6.2	14.1
<i>Waccamaw River.</i>								
Conway, S. C.	40	7	2.6	24	1.3	1	2.1	1.8
<i>Savannah River.</i>								
Calhoun Falls, S. C.	347	5.0	13	2.4	10	3.2	2.6
Augusta, Ga.	268	82	14.5	14	6.0	9, 10	8.1	8.5
<i>Broad River.</i>								
Carlton, Ga.	30	4.4	24	2.2	7-11, 23	2.6	2.2
<i>Flint River.</i>								
Albany, Ga.	80	30	5.1	31	3.1	21	4.0	2.0

Heights of rivers referred to zeros of gages—Continued.

Stations.	Distance to mouth of river.	Danger line on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
<i>Chattahoochee River.</i>	<i>Miles.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
West Point, Ga.	239	20	6.0	24	2.4	11	3.6	3.6
<i>Coosa River.</i>								
Rome, Ga.	225	30	7.5	25	0.8	8-11	2.5	6.7
Gadsden, Ala.	144	18	10.8	13	- 0.2	9, 10	3.4	11.0
<i>Alabama River.</i>								
Montgomery, Ala.	265	25	15.6	13	1.0	10	6.7	14.6
Selma, Ala.	212	33	17.8	15	1.3	9, 10	7.1	16.5
<i>Tombigbee River.</i>								
Columbus, Miss.	285	33	18.4	12	- 2.9	9	4.7	16.3
Demopolis, Ala.	155	35	29.2	17	- 0.8	10	14.4	30.0
<i>Black Warrior River.</i>								
Tuscaloosa, Ala.	90	43	39.5	13	0.6	9, 10	12.8	38.9
<i>Columbia River.</i>								
Umatilla, Oreg.	270	25	7.5	4	5.1	22	6.0	2.4
The Dalles, Oreg.	166	40	11.9	3	7.2	23	9.1	4.7
<i>Willamette River.</i>								
Albany, Oreg.	99	30	21.2	13	5.5	29, 30	9.9	15.7
Portland, Oreg.	10	15	15.0	3	5.8	23	9.5	9.2
<i>Sacramento River.</i>								
Red Bluff, Cal.	241	23	12.3	15	3.2	13	5.3	9.1
Sacramento, Cal.	70	29	22.2	21-23	18.0	11	20.5	4.2

* Distance to Gulf of Mexico.

¹ Frozen after the 13th.² Frozen after the 28th.³ Frozen after the 19th.⁴ Frozen after the 14th.⁵ Frozen after the 15th.⁶ Frozen after the 20th.⁷ Frozen after the 27th.⁸ Frozen after the 30th.⁹ Frozen after the 9th.¹⁰ Frozen after the 17th.¹¹ Frozen after the 4th.¹² Frozen on the 31st.¹³ Frozen after the 29th.¹⁴ For 24 days only.¹⁵ Gage carried away on the 4th.

CLIMATE AND CROP SERVICE.

By JAMES BERRY, Chief of Climate and Crop Service Division.

The following extracts relating to the general weather conditions in the several States and Territories are taken from the monthly reports of the respective sections of the Climate and Crop Service. The name of the section director is given after each summary.

Rainfall is expressed in inches.

Alabama.—The mean temperature was 45.0°, or 2.2° below normal; the highest was 79°, at Uniontown on the 13th, and the lowest, 12°, at Oneonta on the 5th. The average precipitation was 5.80, or 2.00 above normal; the greatest monthly amount, 8.49, occurred at Florence, and the least, 3.41, at Highland Home.

Some slight damage to wheat and oats by freeze of 3d to 7th.—*F. P. Chaffee.*

Arizona.—The mean temperature was 46.7°, or 1.4° below normal; the highest was 95°, at Ariaca on the 2d, and the lowest, 1° below zero, at Flagstaff on the 21st. The average precipitation was 0.16, or 0.34 below normal; the greatest monthly amount, 1.60, occurred at Fort Apache, while none fell at a number of stations.—*W. G. Burns.*

Arkansas.—The mean temperature was 41.0°, or 2.4° below normal; the highest was 74°, at Camden on the 1st, at Prescott on the 2d, and at Luna Landing on the 7th, and the lowest, 8°, at Winslow on the 15th. The average precipitation was 4.08, or 0.11 below normal; the greatest monthly amount, 6.46, occurred at Mossville, and the least, 1.20, at Prescott.

The greater portion of wheat was sown late, but the weather has been favorable during the month, and the crop is in excellent condition.—*E. B. Richards.*

California.—The mean temperature for the State, obtained by weighting the reports from 269 stations, so that equal areas have about the same weight, was 45.8°, which was 0.4° below the December normal for the State, as determined from 188 records; the highest was 96°, at Irvine, Orange County, on the 24th; the lowest, 17° below zero, at Bodie, Mono County, on the 19th. The average precipitation for the State, as determined by the records of 288 stations, was 3.03; the deficiency, as indicated by reports from 200 stations, which have normals, was 0.87; the greatest monthly amount, 16.23, occurred at La Porte, Plumas County, and the least, trace, at several stations in southern California.—*Alexander G. McAdie.*

Colorado.—The mean temperature was 24.9°, or 1.0° below normal; the highest was 68°, at Trinidad on the 1st, 25th, and 26th, and the lowest, 42° below zero, at Troutvale on the 14th. The average precipitation was 0.90, or nearly normal; the greatest monthly amount, 2.80, occurred at Ruby, and the least, 0.06, at Saguache.—*F. H. Brandenburg.*

Florida.—The mean temperature was 59.2°, or nearly normal; the highest was 84°, at Nocatee on the 12th, 15th, and 16th, and the lowest,

23°, at McClenny on the 30th. The average precipitation was 2.07, or slightly below normal; the greatest monthly amount, 6.05, occurred at Pensacola, and the least, 0.58, at Myers and Orange City.—*A. J. Mitchell.*

Georgia.—The mean temperature was 45.0°, or 3.8° below normal; the highest was 80°, at Jesup and Maury on the 19th, and the lowest, 8°, at Dahlonga on the 30th. The average precipitation was 3.44, or 0.34 below normal; the greatest monthly amount, 6.56, occurred at Greenbush, and the least, 0.85, at Hephzibah.—*J. B. Marbury.*

Idaho.—The mean temperature was 25.8°, or 1.4° above normal; the highest was 61°, at Garnet on the 8th, and the lowest, 32° below zero, at Chesterfield on the 21st. The average precipitation was 1.65, or 0.30 below normal; the greatest monthly amount, 5.34, occurred at Murray, and the least, 0.37, at Garnet.—*S. M. Blandford.*

Illinois.—The mean temperature was 29.2°, or 1.7° below normal; the highest was 66°, at Centralia on the 1st, and the lowest, 8° below zero, at Scales Mound on the 30th. The average precipitation was 2.33, or about normal; the greatest monthly amount, 5.27, occurred at Raum, and the least, 1.17, at La Harpe.

Wheat is short in acreage in all northern and most central counties, but large acreage is reported in the southern district; little snow protection has been given the plant thus far, but it is generally strong and vigorous; the hessian fly seems to be about the only damaging cause.—*C. E. Linney.*

Indiana.—The mean temperature was 30.6°, or 2.2° below normal; the highest was 65°, at Vevay on the 1st and at Edwardsville on the 11th, and the lowest, 11° below zero, at Richmond on the 16th. The average precipitation was 3.16, or 0.38 above normal; the greatest monthly amount, 5.90, occurred at Vevay, and the least, 1.51, at Hammond.

During the cold nights in the middle of the month the ground was well covered with snow, but during the last week of the month, when very cold weather prevailed, the fields were bare, and it is feared the freezing and thawing injured the wheat, except in the eastern and southern portions, where it was protected by snow. In some fields, especially in the southern portion, the wheat never looked better; it is well rooted, green, and healthy. In other fields it looks brown and is apparently in bad condition. The hessian fly is injuring the early sown in many fields.—*C. F. R. Wappenhans.*

Iowa.—The mean temperature for December was 22.6°, or about 1.0° below normal; the highest was 75°, at Belknap on the 22d, and the lowest, 19° below zero, at Ruthven on the 31st. The mean temperature for the year was 47.6, or 0.2 above normal for the past decade. The average precipitation for December was 1.61, or slightly above normal; the greatest monthly amount, 4.28, occurred at Monticello, and the least, 0.10, at Clearlake. The average precipitation for the year was 29.10, or about 1.0 below normal for the past decade. The greatest